I. Project Goals

• Increase first year (freshman to sophomore) retention level of first-time freshmen from 57% by 10 – 15% for STEM majors with a target level of 70%
• Increase STEM undergraduate degrees by 22% from 2007-8 to 2013-14
• Increase the first year retention rate of at-risk freshman engineering students by 10%
• Continue to increase the women in engineering enrollment from 12.8% in 2008, attaining 15% or more by program’s end (2014)
• Institutionalize freshman STEM Learning Communities and Orientation programs

II. Strategies to Achieve Goals

• Focus on STEM retention – at the critical freshman to sophomore year
  Transform mathematics
    - Use ALEKS math assessment and learning modes to hone in on and permanently resolve gaps in student knowledge
• Apply best practices from other innovative programs
  • Expand the successes already realized in engineering to the rest of the university
    - Learning communities
    - ALEKS math assessment
    - Research internships
  • Faculty learning communities

III. Past Successes

• Dimensional analysis taught to engineering students at precalculus level – expand to all STEM majors
• ALEKS was discovered to be a strong tool for helping under prepared students be successful in engineering courses
• These efforts have helped with retention, see Table 1

IV. Year One Goals and Progress

• Project coordinator in place
• STEM focused 2010 summer orientation program being planned
• New course for underprepared students under development for fall 2010 to include dimensional analysis
• Assessment plan under development
• Cohort 1 faculty and instructor learning communities in planning stages

Table 1: First-time full-time freshman to sophomore retention

<table>
<thead>
<tr>
<th>Year</th>
<th>Group</th>
<th>Number in Group</th>
<th>% retained at University</th>
<th>% retained in any STEM major</th>
<th>% retained in original STEM group ALEKS or COAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>AHG</td>
<td>194</td>
<td>73.5</td>
<td>51.1</td>
<td>45.8</td>
</tr>
<tr>
<td>2010</td>
<td>COAS</td>
<td>83</td>
<td>68.8</td>
<td>50.4</td>
<td>46.1</td>
</tr>
<tr>
<td>2010</td>
<td>ALEKS</td>
<td>63</td>
<td>69.9</td>
<td>50.4</td>
<td>46.1</td>
</tr>
<tr>
<td>2010</td>
<td>non-ALEKS</td>
<td>94</td>
<td>70.2</td>
<td>50.0</td>
<td>46.1</td>
</tr>
</tbody>
</table>

Figure 1: Calc I Pass Rates Spring 2008

Figure 2: Retention rates for lower division study

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